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USE CASE FOR INFORMATION MANAGEMENT

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14. ABSTRACT This paper aims to present a scenario indicating how a combat information management system, Operation Information Management (formerly known as the Joint Battlespace Infosphere) can be utilized during an operation involving a multi-national coalition force. In this instance, the scenario is carried out in a fictional nation located in the Middle East. The information management structure is demonstrated during a mission that takes place during the course of the much larger operation. This is allegorical to an event such as Operation Anaconda during Operation Enduring Freedom in Afghanistan.					
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Use Case for Information Management

The following is a use case based in a fictional Middle Eastern nation. The aim of this use case paper is to demonstrate how a combat information management system (Operation Information Management, formerly the Joint Battlespace Infosphere) can be utilized by a multinational coalition force during a military operation.

Scenario Description

Sidon is a small (fictional) nation located in the Middle East (see map). A former French colony, Sidon obtained independence in 1965, shortly after the Algerian Revolution. In the immediate years following independence, Sidon struggled as a nation, going through several different governments in a short period of time while experiencing high rates of poverty and poor



infrastructure. Stable governance would eventually be established, though corruption in government remained prevalent. Sidon's discovery in the early 1990s of some of the largest untapped oil reserves in the World did not translate into an advancement of conditions for the majority of Sidonans, who remained amongst the poorest people in the Middle East.

In 2001 the Sidonan military laid siege to government buildings in the capital, Sidon City, and took control of the country. The subsequent military junta ruled Sidon oppressively, immediately shutting down the free press, stripping citizens of many legal rights, using brute force to crush any dissent, and establishing a secret police force with

the purpose of terrorizing its own citizens. The use of large amounts of oil wealth allowed for a massive strengthening of military forces and an arms build-up. It was also believed that the junta was developing chemical weapons facilities, something that led a number of nations, including the United States, to place sanctions on the country.

In the winter of 2010, the junta sent large elements of its army across the country's southern border into northern Lebanon, where it took control of a large part of the fertile Beqaa Valley, claiming that the land was historically Sidon's territory. The incursion drew a swift response from the Lebanese Armed Forces, who were aided by large elements of the Jordanian military. Though Sidon's Armed Forces (SAF) was large and well armed, Lebanese and Jordanian forces were not only more experienced and better trained but also equipped with more advanced western weaponry. A week of heavy fighting in the Beqaa Valley would eventually see the SAF pushed out of the region and back into its own territory. The SAF, in their retreat, began shelling Lebanese towns just over the border. This led to Lebanese and Jordanian forces entering Sidon with the intent of removing the belligerent military government. Lebanese and Jordanian aircraft launched sorties against a number of military installations and established air superiority over the much weaker Sidonan Air Force. Sidonan forces on the ground had minimal air protection and the Lebanese and Jordanian aircraft could strike them nearly uninhibited, paving the way for ground troops. An already battered SAF soon found itself being pushed deep into its own territory.



Sidonan troops retreating from the Beqaa Valley in Lebanon.

Shaken by the superior firepower of the Lebanese and Jordanians, many SAF members deserted or surrendered, further hastening the march towards the capital city. During operations near the capital city, Jordanian Special Forces captured an underground bunker where chemical weapons formation was taking place, confirming the suspicions of many in the international community. Within two weeks of entering Sidonan territory, the Lebanese and Jordanian forces entered Sidon City, much of which was leveled by intense shelling. With little left to defend to capital from falling, the Sidonan leadership conceded and called for a ceasefire, signaling the end of the short-lived Lebanon-Sidon conflict.

After the fighting in Sidon had ceased the combating sides, under the auspices of the United Nations, sat down for peace talks in Lyon, France. In the Lyon Accords, as the eventual peace deal would be known, the military junta in Sidon agreed to relinquish its power and to pay large monetary reparations to the Lebanese government. In return, Sidon would not have to cede any territory to Lebanon. The Sidonan military would be purged of any remaining commanders and would have to be rebuilt. The Accords established the Sidon Provisional Authority (SPA), which would serve as the interim

government in the country until elections could be held. A UN Resolution was also passed in conjunction with the peace talks that established a Peacekeeping force, titled United Nations Protection Force Sidon (UNPROFS) that would maintain order in the shattered country (much of Sidon is comprised of small cities, many of which were affected by the conflict. Sidon City, the economic and cultural hub of the small nation, was severely damaged). The International Security Assistance Force (ISAF) would also send a small force to train the new Sidonan Security Forces (SSF).

Before the brief Lebanese-Sidonan War had begun, an al Qaeda affiliated organization, known as al Dairat (Arabic for “the bureau”) began to take form. Al Dairat militants sought an end to the military rule in Sidon, as they perceived the military commanders as being overly secular. Al Dairat, despite its radical views, gained popularity amongst many Sidonans because of its stance against the repressive military regime. Al Dairat partook in bombings and small-scale attacks against the military government, but never reached the point of full-blown rebellion. By the end of the Lebanon-Sidon War, the organization had grown in numbers and attracted a large number of foreign fighters. The areas of Sidon where al Dairat was strongest became new base for Al Qaeda and safe havens for terrorists.

Shortly after the installment of the SPA, al Dairat began an insurgency within the country in an attempt to undermine the newly installed authority and take over control of the government. The small, undertrained and ill-equipped SSF were in danger of being over-whelmed by al Dairat fighters, many of which had been trained in Al Qaeda camps and had experience fighting in Afghanistan and Iraq. Al Qaeda militants also participated in the insurgency. The UNPROFS Peacekeepers and the ISAF contingent could do

nothing to actively seek out and engage insurgents due to mandate constraints. A number of nations, including the United States, believed that military action needed to take place in Sidon, to prevent it from becoming another Afghanistan, a nation ruled by terrorists. It was also noted that al Dairat could potentially have access to chemical weapons facilities left behind by the military government. A month into the campaign the insurgents began to target UN Peacekeepers, when a convoy of Bangladeshi Peacekeepers was ambushed while operating near the Beqaa Valley. All twenty-six peacekeepers were killed. Shortly after, rocket attacks in Sidon City killed four Ugandan Peacekeepers. ISAF members also came under attack, as two Romanian soldiers were killed and one wounded by sniper fire. These actions prompted intense calls for action from the United States and its allies.

United Nations General Assembly adopted Resolution 2714 in response to the targeting of UNPROFS and ISAF members. The Resolution gave UN approval to a United States-led armed intervention into Sidon. With the resolution, Sidon became a new front in the War on Terror. The U.S.-led engagement in the country would be known as Operation Gray Fox (OGF). In preparation, the United States formed a coalition of a number of nations willing to partake in the operation. The coalition would be known as Joint Task Force Sidon (JTFS).

JTFS Overall Military Situation

Mission Objectives:

The objectives of the JTFS intervention in Sidon are:

- Eliminate the al Dairat and al Qaeda insurgency.
- Eliminate al Dairat leadership.
- Secure any chemical weapon sites that remain inside Sidon.
- Stabilize the SPA's rule in Sidon (this will be the task of a strengthened ISAF force supported by elements of JTFS who remain after combat operations).

Joint Task Force Sidon:

The United States gathered a number of nations willing to take part in OGF.

Those nations aiding the United States-led intervention in Sidon are: Australia, Canada, Cyprus, Denmark, Egypt, France, Germany, Jordan, Kuwait, Norway, Poland, Qatar, Turkey, and the United Kingdom.

Composition:

(I) Maritime: Contributions to JTFS-

- United States-
 - USS *Ronald Reagan* (Nimitz-class aircraft carrier)
 - USS *Normandy* (Ticonderoga-class cruiser)
 - USS *The Sullivans* (Arleigh Burke-class destroyer)
 - USS *Saipan* (Tarawa-class amphibious assault ship)
 - USS *Iwo Jima* and USS *Kearsarge* (Wasp-class amphibious assault ships)
- United Kingdom-
 - HMS *Ark Royal* (Invincible-class aircraft carrier)
 - HMS *Manchester* and HMS *Liverpool* (Type-42 destroyers)
 - HMS *St. Albans* (Type-23 frigate)
 - HMS *Albion* (Albion-class landing vessel).
- France-
 - *Charles de Gaulle* (aircraft carrier)
 - *Montcalm* (Georges Leygues-class frigate)
 - *Jeanne de Vienne* (Georges Leygues-class frigate)
- Germany-
 - *S77 Dachs* (Gepard-class fast attack craft)
 - *L765 Schlei* (Barbe-class landing craft)

Total Maritime Contribution: 14 vessels

(II) Air: Contributions to JTFS-

- United States-
 - 3 x AC-130 Spectre Gunship
 - 4 x C-130 Hercules (transport aircraft)
 - 20 x CH-47 Chinook (cargo helicopter)

- 25 x F-16 Fighting Falcon (tactical fighter)
- 10 x F/A-18 Hornet (strike fighter jet)
- 7 x F-15 Eagle (tactical fighter)
- 2 x KC-135 Stratotanker (aerial refueling tanker aircraft)
- 10 x AH-64 Apache (attack helicopter)
- 2 x E3 AWACS (surveillance aircraft)
- 5 x MQ-1 Predator (unmanned aerial vehicle)

- United Kingdom-
 - 8 x BAE Harrier (strike aircraft)
 - 17 x Eurofighter Typhoon (strike aircraft)
 - 6 x Panavia Tornado (fighter/bomber aircraft)
 - 3 x C-130 Hercules (transport aircraft)
 - 20 x CH-47 Chinook (transport helicopter)
 - 2 x Westland WAH-64 Apache (attack helicopter)

- Canada-
 - 8 x CF-18 Hornet (strike fighter jet)
 - 5 x CH-149 Cormorant (transport helicopter)
 - CC-150 Polaris (transport aircraft)

- France-
 - 10 x Dassault *Rafale* (multirole fighter)
 - 4 x Eurocopter AS 532 Puma (transport helicopter)

- Germany-
 - 7 x Eurofighter Typhoon (tactical fighter)
 - 3 x Transall C-160 (tactical transport)

- Norway-
 - 6 x Fighting Falcon (multirole fighter)
 - 3 x NHI NH90 (transport helicopter)

- Turkey-
 - 5 x F-16 Fighting Falcon (multirole fighter)

Total Air Contribution: 195 aircraft

(III) *Ground Forces: Contributions to JTFS-*

- United States-
 - 3rd Brigade I Marine Expeditionary Force
 - Brigade 82nd Airborne Division

- Battalion of U.S. Army Rangers
 - 2 Companies 3rd Special Forces Group
 - Company DEVGRU operators
 - 100 Air Force SOF
- United Kingdom-
 - 2 Brigades 3 Commando Brigade (Royal Marines)
 - Brigade 16th Air Assault Brigade
 - Company SAS operators
 - Company SBS operators
- Canada-
 - Brigade of Princess Patricia's Canadian Light Infantry
 - 2 Battalions Royal 22^e Régiment
 - 200 JTF-2 Operators
- France-
 - Battalion 1er Régiment de Parachutistes d'Infanterie de Marine commandos
 - 150 7e Battalion *Chaussers Alpins*
- Germany-
 - 150 Kommando Spezialkräfte (KSK) operators
 - 500 1st Light Infantry Regiment (airmobile) troops
- Denmark-
 - 400 Gardehusarregimentet troops
 - 50 Jægerkorpset operators.
- Australia-
 - 300 Australian SASR operators
- Poland-
 - 75 GROM Operators
- Norway-
 - 25 Hærens Jegerkommando operators
 - 10 Forsvarets Spesialkommando operators

Total Ground Force Contribution: 34,195 troops

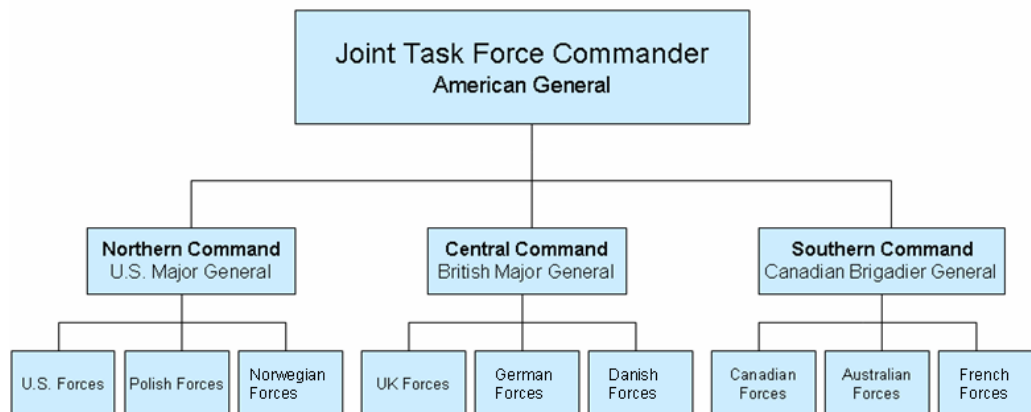
(IV) ***Non-Combat: Contributions to JTFS-***

- Cyprus-
 - Opened ports to naval vessels.
 - Allowed use of air space and territorial waters.
- Egypt-
 - Allowed use of its airspace.
- Jordan-
 - Provided basing for JTFS forces.
 - Allowed use of its airspace.
- Kuwait-
 - Provided basing for JTFS forces.

- Allowed use of its airspace.
- Qatar-
 - Offered JTFS forces uses of Al Udaid Airbase.
- Turkey-
 - Allowed the use of Incirlik Air Base for operations.
 - Granted use of air space and territorial waters.

Command Structure:

Since the operation in Sidon is led by the United States, the entire JTFS will be commanded by an American General. For the operation, Sidon will be separated into three regions: Northern Command, Central Command, and Southern Command. The three largest contributors to the Joint Task Force, the United States, the United Kingdom, and Canada, will each be given control of one of these sections of Sidon. The rest of the coalition nations will be distributed amongst the three regions. The assigned region is where coalition nations will deploy their forces. The diagram below illustrates the command structure for the operation.



The SOF components of both the American and British forces (3rd Special Forces Group, DEVGRU units, Air Force SOF, SAS, and SBS units) will not deploy with the main invasion forces. Instead, they will enter Sidon beforehand to spearhead the

operation, to set up forward operating positions and then perform reconnaissance and then act as eyes-on-target for coalition aircraft. Several units will also link up with the SSF and Kurdish militias. They will not be deploying to a specific region, like the rest of the coalition forces, but rather throughout the entire country. These forces are therefore excluded from the above diagram.

Description of Area of Operations:



A. Geography:

(I)General

Situation/Effects on JTFS- Sidon, located in the Middle East, shares borders with Lebanon and Syria. Lebanon lays to the south and a strip of Syria borders to the north. The Mediterranean is to the West and Syria again borders to the East (refer to map). Sidon is 9,891 km² in area, making it slightly smaller than Lebanon. Conducting military operations in large countries can be difficult, meaning Sidon's small size serves as an advantage to JTFS. The proximity of the country to Turkey and Cyprus serves the JTFS greatly, as both countries will act as bases and launching points for JTFS forces. The Mediterranean coastline gives the JTFS the

option of deploying troops via ship. The long border shared with Syria is a cause for concern, as it may act as an entrance for insurgents.

(II) Topography

Situation/Effects on JTFS- Most of Sidon, especially the northern and central regions, is rural steppe. A mountain range is located in the east of Sidon, running along part of the border shared with Syria. The Turkish Taurus Mountains also extend into northern Sidon. In a part of southern Sidon, Lebanon's Beqaa Valley spreads over the border. The western strip of Sidon abutted by the Mediterranean is largely coastal plain. Outside of the capital Sidon City, most of Sidon's major urban centers are located along the coast. The steppe and coastal plains features of Sidon are advantageous to JTFS, as neither are categorized as harsh terrain. Given that NATO forces experienced difficulty fighting the Taliban the valleys of Afghanistan, military engagements in Sidon's Beqaa Valley may prove formidable. Al Dairat and al Qaeda insurgents have almost no presence in the mountains, which are occupied by the Kurdish minority, so JTFS will have to conduct minimal operations there. Enemy forces have established a heavy presence in Sidon's cities, meaning JTFS forces will have to conduct urban operations.

(III) Hydrography

Situation/Effects on JTFS- Sidon is bordered to the west by the Mediterranean Sea. This enables JTFS to land forces along Sidon's coast, the location of most of the country's urban centers. Sidon has a number of rivers and other waterways, though none of them are navigable.

B. Climate/Weather:

Situation/Effects on JTFS- Sidon has a Mediterranean climate , meaning it has cool, mild winters and hot, dry summers. Any rainfall during the summer is rare. Since OGF is taking place during the summer, rain should not disrupt any JTFS maritime or airborne operations.

C. Transportation:

(I) Road

Situation/Effects on JTFS- Despite large potential oil wealth, Sidonan infrastructure remains poor, and does not have a large number of paved roads. Most of the roadways are those linking the capital with larger cities along the Mediterranean coastline. Many of these roads were damaged during the brief war with Lebanon, JTFS vehicles may experience difficulty when traveling along them, but they are still passable. Outside of these, however, most roadways in Sidon are dirt or rolled stone. Vehicle movement

along these dirt roads can be extremely difficult, particularly in wet weather.

(II) *Air*

Situation/Effects on JTFS- Two medium-sized civilian airports exist in the country, one in the capital Sidon City and the other in the port city of Zayed, though severe damage has been inflicted upon both facilities. JTFS may be able to utilize the air strips at both locations for landing troops or supplies. The Sidonan military also had a number of small air bases throughout the country, but Lebanese and Jordanian aircraft rendered them useless through heavy bombing.

(III) *Rail*

Situation/Effects on JTFS- Sidon's rail network consists of standard gauge track running between the major cities, with lines branching off to the Beqaa Valley and to mines in the north and east. Currently, the rail lines are unusable due to damage received during the war.

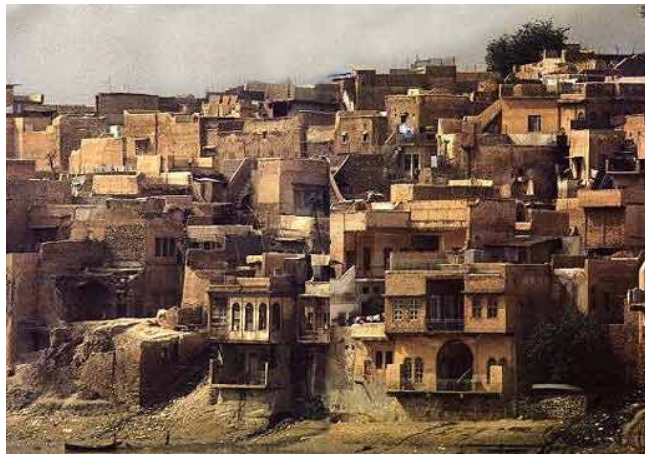
D. Demographics:

Situation/Effects on JTFS- Sidon's overall population is 5,815,702. About 97% of the Sidonan population is Muslim, with a small number of Christian Maronites located in southern Sidon. 91% of Sidonans are ethnic Arabs, while the other 9% being Kurdish, who reside solely in the eastern mountain ranges. Before the removal of the military regime, A large number of Sidonans supported the al Dairat cause. With the established of a provisional government, though alienated by the organization's extremism, but still many Sidonans support al Dairat. This means that JTFS forces may find a number of civilians to be hostile. A majority of Sidonans live in village communities throughout the country, which is not densely populated. About a quarter of the country lives in Sidon City and in the cities along the coast. These cities are small in area and are densely populated. JTFS forces will have to exercise caution when conduction operations in these areas to avoid civilian casualties.

E. Sociology/Culture:

Situation/Effects on JTFS- Sidon suffers from both the lowest per capita income and the lowest HDI in the middle east. A majority of its citizens live in poor economic conditions. This is the cause of the popularity al Dairat enjoys amongst many Sidonans. The organization has exploited both the misery and the subsequent falling-back on religion of many Sidonans to gain support, by offering a means of stable governance that the weak SPA may not be able to produce.

Despite the fact that the extremist ideology propagated by the insurgents is not compatible with many Sidonans, they are willing to overlook this as long as effective rule can be established. Even so, religion is still an important part of Sidonan society, and JTFS forces will have to take caution as to respect Islamic tradition in the region. Arabic is official language of Sidon, being the first language of nearly 90% of the population. Due to years of French colonial rule, most Sidonans over the age of fifty can speak and understand French. In the rural areas of northern and central Sidon, village elders are given great respect and are viewed as important figures. JTFS forces may make it priority to enlist the support of these village leaders.



A typical Sidonan village. Most Sidonans live in communities such as this one.

Friendly Forces:

The Sidonan Provisional Authority's small military will partake in JTFS operations against al Dairat and al Qaeda insurgents. UN Peacekeepers and ISAF forces do not have proper mandates to actively engage enemy forces, but will aid the JTFS mission. Also, militias that formed amongst the Kurdish community during military rule will aid the JTFS effort. The SPA had agreed to give the Kurds a large amount of autonomy and the Kurdish community fears rule by an extremist group such as al Dairat. However, Kurdish militias cannot play too large a role in operations for this may lead to Turkey rescinding any contributions to the mission.

Friendly Forces' Capabilities:

A. Sidonan Security Forces (SSF):

- *Ground Forces*- Estimated at being around 9,000-9,500 personnel (2 Infantry Brigades). After the signing of the Lyon Accords the SSF was set at 10,500 personnel. However, casualties from insurgent attacks and a number of instances of desertion have created a significant decrease in military numbers. The ground forces consist only of under-trained and poorly-equipped conscripts who are armed mainly with the weaponry of the old army along with a small number of FAMAS rifles sent by the French. Of the 2 infantry brigades, one battalion is mechanized infantry. The mechanized troops rely almost solely upon armored personnel carriers (APCs) donated by other nations, having only 10 antiquated Soviet BMP-1 infantry fighting vehicles and 20 tanks, 15 T-72s and 5 T-90s (all recovered from the previous military), in its possession.
- *Air forces*- The SSF has no air force. The small air force of the previous military was almost completely destroyed during fighting. Thus far no personnel have been allotted to rebuild the air force.
- *Naval Forces*- The Sidonan Navy is comprised of 110 personnel manning 5 attack class patrol boats. The Navy did have one small frigate donated by France, but it was destroyed when al Dairat suicide bombers rammed the ship with a boat packed with explosives.

B. Kurdish Militias:

- *Ground Forces*- The Kurdish militias located in Sidon's eastern mountains are estimated at being around 2500-4000 personnel. The Kurds have no heavy military equipment, and rely solely upon small arms, namely Kalashnikov rifles and rocket propelled grenades (RPGs). The main method of transportation is by horseback. Living and having to survive in the harsh terrain of eastern Sidon has made the Kurds expert marksmen and a durable force while years of resistance against the military government turned the militias into extremely efficient guerilla fighters.

C. International Security Assistance Force (ISAF):

- *Ground Forces*- The presence of ISAF personnel in Sidon is to train the newly formed SSF. The work of the ISAF has greatly been undermined by an ill-equipped SSF and by insurgent attacks that begin shortly after the start of the mission. The ISAF mission is small, only consisting of a little more than 1000 military personnel on the ground. The ISAF is comprised of units from France, the Netherlands, Romania, South Korea, and the United

Arab Emirates. ISAF forces cannot partake in offensive missions, but will be supportive of the JTFS mission.

- *Air Forces*-The ISAF has a number of transport helicopters in Sidon to transport materiel and personnel. The Netherlands and the UAE each have four F-16 Fighting Falcons operating in the country as a security measure since Sidon has no existing air force.

D. United Nations Protection Force Sidon (UNPROFS):

- *Ground Forces*- The UNPROFS mission was undertaken to maintain peace in Sidon during the rebuilding of the nation. UNPROFS is comprised of 10,000 UN military personnel from Bangladesh, Bolivia, Nepal, Nigeria, Pakistan, Philippines, Sweden, and Uganda. Like the ISAF contingent, UNPROFS personnel cannot undertake offensive missions. They will aid in providing security where JTFS forces have finished conducting operations.

Enemy Forces:

Insurgents from the extremist organization al Dairat, as well as a number of insurgents for al Qaeda, are the enemy combatants in the Sidon theater. A large number of civilians are supportive of the insurgents, and may be hostile to JTFS efforts. Other Sidonans, though not supportive of the insurgency, will be reluctant to aid the JTFS mission for fear of reprisal killings.



Al Dairat insurgents, with the help of al Qaeda, have taken control of large portions of Sidonan cities

Enemy Forces' Capabilities:

A. Al Dairat insurgents:

- *Ground Forces*- Several reports claim that the number of insurgents in Sidon exceeds 20,000. Many of these are ethnic Sidonans, but some are fighters coming from surrounding nations. Much of the enemy forces are capable fighters, having received training from al Qaeda or even having seen combat in areas such as Iraq and Somalia. The insurgents' main form of weaponry is small arms such as Kalashnikov rifles and RPGs. Al Dairat is known to have a small number of man-portable SA-7 SAMs in its possession, and there have been reported incidents of the use of the crudely made Qassam rockets. The insurgents also have commandeered a small number of T-72 tanks from an abandoned military depot. Though it is not known whether or not al Dairat has chemical weapons already in its possession, it is believed that the insurgents may be able to access the technology from sites left by the former military regime.
- *Naval Forces*- The insurgents has a small number of gunboats it uses to patrol the Mediterranean waters and carry out acts of piracy. Suicide bombers have also been known to commandeer small boats packed with explosives for their missions.

B. Al Qaeda insurgents :

- *Ground Forces*- It is not known how many al Qaeda units are operating within Sidon. It is believed that al Qaeda members are acting as advisors to the al Dairat forces and serve as the planners and coordinators of the attacks on government troops.

Operation Gray Fox

SOF units enter Sidon via aircraft departing from Incirlik Air Base in Turkey and the carriers USS *Ronald Reagan* and HMS *Ark Royal*. Aircraft departing from Incirlik had to circumvent the strip of Syrian territory that separates Sidon from Turkey. The forward-deployed SOF units set up operating positions and begin reconnaissance of enemy positioning, eventually calling in air strikes on enemy positions, effectively beginning the campaign. A small number of SOF meet up with members of the SSF and begin to coordinate ground attacks on the insurgents.

Operation Big Shell:

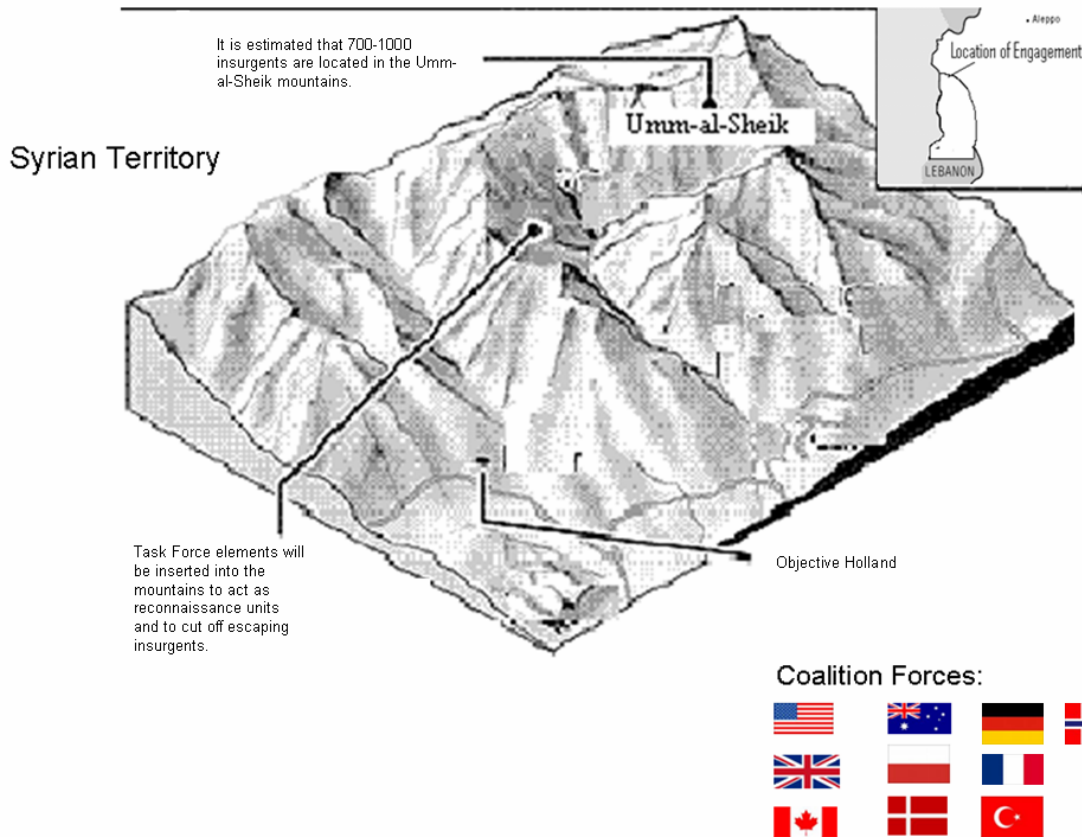
After an initial bombing campaign of enemy positions by coalition aircraft, enabled by American and British SOF on the ground to perform precision air strikes, JTFS ground forces were deployed into Sidon by both sea and air. Coalition vessels delivered troops to several locations along Sidon's western coast. Aircraft flying from the aircraft carriers USS *Ronald Reagan* and HMS *Ark Royal* as well as Incirlik Air Base in Turkey and air bases in Cyprus deployed JTFS forces inland. The insurgents' air defense capabilities were non-existent, allowing coalition aircraft to strike with near impunity and severely damage enemy forces before ground troops were even deployed. Coalition forces possessed far superior troops and equipment than the insurgents and were able to drive enemy forces (already weakened from coalition air strikes) from their entrenched positions and put control of the country back in the hands of friendly forces in a short period of time. JTFS forces experienced fierce street fighting in Sidon's largest cities Sidon City and Zayed, and suffered most casualties during the course of urban fighting. However, all of Sidon's urban areas would ultimately fall to coalition forces. Coalition SOF formed "hunter teams" to seek out any chemical weapon sites abandoned by the past military regime that the new Sidonan government may have failed to secure. No such sites were found.

A large concentration of enemy combatants (estimated at being between 700-1000) who have escaped coalition forces exists in a small area in the Nahia Province, located in northern Sidon near the Syrian border. Senior al Dairat leaders are thought to be amongst these numbers. The enemy forces are situated in the Umm-al-Sheik Mountains, which are a part of the larger Taurus Mountain chain. JTFS commanders fear

that the insurgents may use the mountains as a passage into Syria in an attempt to escape. This is the same area that al Qaeda fighters are believed to have used as passage into Sidon. Coalition forces, combining units from the three commands, undertake an operation in an attempt to deliver a crippling blow to al Dairat and al Qaeda forces before they can flee into Syria. The operation, dubbed Operation Big Shell, would be a SOF-oriented mission, allowing conventional forces to maintain a hold on the rest of the country along with the Sidonan Security Forces and UN Peacekeepers. Forces involved in the operation would be: Two companies of U.S. Army Rangers, 300 Royal Marines, along with 350 other SOF personnel from three different coalition Task Forces that were formed out of elements of coalition SOF: Task Force Kukri (U.S. DEVGRU, 3rd Special Forces Group, Air Force SOF, Polish GROM), Task Force 32 (British and Australian SAS, Canadian JTF-2, Norwegian Hærens Jegerkommando), and Task Force Ocelot (German KSK, French *Chaussers Alpins*, Danish Jægerkorpset). A company from the Royal 22^e Regiment, 60 French Marine Commandos, and 350 SSF personnel will also be involved in Operation Big Shell. The aircraft involved in the operation would be: An American AC-130 Gunship, eight American F-16s, four American F-18s, five British Eurofighter Typhoons, three French Dassault *Rafale*, two Danish F-16s, three Turkish F-16s, two American Apache helicopters, five American Chinook helicopters, five British Chinook helicopters, an American MQ-1 Predator Drone, and an American AWACS aircraft.

Big Shell takes place during the night, affording forces inserted into the area of operation by helicopter the cover of darkness, for enemy combatants lack night-vision technology. Being that it is still summer in Sidon, weather conditions in the Umm-al-

Sheik Mountains are not severe, meaning coalition aircraft can operate without much difficulty. The operation begins on D-Day at 0100 with the insertion of all of Task Force Kukri and elements from the two other SOF task forces, by helicopter, into the Umm-al-Sheik Mountains. The SOF personnel, operating in groups of 3-4, are put into position for two reasons: To act as blocking points to prevent enemy escape through the mountains into Syrian territory; to serve as reconnaissance units for other coalition forces and aircraft. Units assigned to blocking positions are given the call sign Kilo 01, Kilo 02, etc, while reconnaissance units are designated Razor 01, Razor 02, etc. Units from all three task forces are assigned blocking positions throughout the area of operation, while only Task Force Kukri, which has Air Force Combat Controllers amongst it, is assigned to reconnaissance positions. The rest of the coalition forces, (including the rest of Task Forces 32 and Ocelot), which make up the main assault force will be inserted shortly afterward at the base of the mountains, and are designated Objective Holland, to assault al Dairat and al Qaeda positions in the mountains. These forces, strengthened by real-time information from Razor units and air support, push up the mountains into enemy positions. Any enemies fleeing the fighting can only run for the Syrian border, and in doing so will be channeled into SOF Kilo units. Though the main assault force will face an uphill climb, any height advantage given to the enemy is greatly diminished by coalition air support capable of precision strikes due to the emplacement of SOF reconnaissance units.



Information Management Infrastructure

A total of five information management *federates* will be setup and configured to support Big Shell. One information space will be constituted for each Task Force for a total of three. A fourth federate will be created for coalition air support requests and the fifth will handle additional intelligence requests. The latter will be configured at the US national level and will primarily support intelligence requests, via subscription, for US forces in Task Force Kukri; however, it will publish relevant and updated intelligence information to all task forces. Some intelligence production assets will be within line of sight (LOS) communications to all forces, while others will be beyond line of sight (BLOS) and can only be reached through subscription and query services provided by the information management infrastructure.

To enable LOS communications between federates, radio frequency information will be provided in the metadata of information objects that traverse the domains to facilitate direct communication for further deconfliction and detailed mission execution.

Blue force tracking will be reported at the platform and soldier level and stored locally in the task force information space (TFIS). Aggregate reports, with the ability to drill down into the platform level, will be provided as an intra-federate subscription service. This will allow all ground forces to essentially subscribe over a given geographical region and receive instant situational awareness (SA) and the location of friendly forces. Alerts can be configured within these subscriptions to determine if other friendly forces come into range of a Task Force's area of interest (AOI). Retrofitting aircraft within the Air Support Request information space to automatically receive friendly force SA will be a little trickier. Aircraft configured with information-capable targeting and navigational pods will be able to translate friendly force SA into icons or symbology on their heads up display. For those aircraft without these pods, a simple on-board adapter that can translate link 16 messages back and forth into information objects will provide a similar capability. Both of these approaches have been demonstrated to date as emerging information management enhancements.

When standing up the individual task force domains, an overall policy must be defined and enforced within and among the federated information spaces. All will have equal access to the air support request *network* and all requests will be treated with equal priority. All federates will have access to any published intelligence information from a

variety of in-theater intelligence assets, including source. Under certain circumstances, U.S. national and other international intelligence will be published to the task forces as enemy order of battle (EOB) *without* source information. However, only Task Force Kukri will have direct query support for archived intelligence information, including source, that hadn't originally been published within the in-theater intelligence information space. Other federates can query for information that had already been published in theater; however, this policy definition will prevent the disclosure of sources and information that might reveal information unrelated to the current mission. Basically, all relevant intelligence to Big Shell will be provided to the task forces, but there are cases where US forces might have a slight advantage by having access to additional information that might aid the operation.

The in-theater intelligence includes information obtained from several assets: Rivet Joint, Predator, and Global Hawk. For Rivet Joint, the platform will provide information extracted from its SIGINT, ELINT, and COMINT sensors to dedicated ground stations. This information will have geo-referenced metadata, and its payload will be used to support an alerting feature within for new "hits." These hits will be passed down to the task forces as metadata initially to conserve bandwidth, allowing individual operators the ability to request amplifying information from the infrastructure. For Predator, there are annotated and geo-referenced still images from its video feeds, as well as access to its metadata-tagged full motion video snippets stored in a central database. Again, disadvantaged users can request only metadata hits from Predator feeds, and download either still images or video snippets based on specific filter criteria. For Global Hawk,

the assumption is that sufficient processing capabilities exist onboard to support direct query requests and access to its terabyte storage of high-quality imagery products. In a sense, the Global Hawk could constitute its own information space, but will act as a query broker for its imagery as payload information. US national assets such as satellite imagery and other unmentionables are available for direct brokering of US operators.

Individual operators using either handheld devices or laptop computers will be able to subscribe over very precise geographical regions to receive the latest intelligence reports and enemy order of battle. Alerts on their screens will key them into situations they may not be directly monitoring. Always knowing the position of friendly ground and air forces will allow task forces to take direct action without constantly worrying about fratricide.

The air support request federate, or *network*, contains air-ground attack assets in a variety of alert statuses setup in geographical zones. Airspaces have been built at the AOC, but will be deconflicted in real time by an AWACS crew. Aircraft positional information can be reported on a link 16 network, and with adapters, will be made available to the information infrastructure in standard formats. Air support requests and aircraft tasking will be paired effectively using a *nine-lines*, allowing requestors to know detailed information of the mission assigned to provide close air support. In this manner, ground forces can communicate up-to-the-minute situational awareness and guide them in using pinpoint accuracy via machine-to-machine transfer.

With several information spaces operating in unison, several capabilities and services must be in place. Information exchange between federates must be enforced using pre-defined policies using existing services. Subscriptions and queries, or *requests*, must be propagated among federates, with care not to propagate in infinite loops. Although the five federates are pre-defined, there needs to be an ability to dynamically discover new information spaces if new information or capabilities become available.

To support the development of this use case, it was best not to re-invent the wheel: several existing use cases were leveraged by lifting actors and information objects from the Time Critical Targeting (TCT) and Predictive Battlespace Awareness (PBA) use cases developed by AFRL and the Georgia Tech Research Institute (GTRI). New information object types, such as geo-referenced still images, publisher persisted payloads, indexed video snippets, paired requests-tasks, and full motion video were not defined due to time constraints.